

CYCLIN-DEPENDENT KINASE INHIBITORS AS PLANT GROWTH REGULATORS

ABSTRACT

Methods for using cyclin-dependent kinase (CDK) inhibitor genes, or anti-
5 sense constructs complementary to such genes, to modify the growth and
development of plant cells and organs are disclosed. Also provided are methods of
modifying the development of plant cells and plants by transforming plant cells with
nucleic acids encoding cyclin-dependent kinase inhibitor polypeptides, or anti-sense
10 constructs complementary to such nucleic acids, to produce transformed plant cells,
and then culturing the plant cells or regenerating a plant under conditions wherein
the cyclin-dependent kinase inhibitor, or the anti-sense construct, is expressed. A
variety of CDK inhibitor genes, and corresponding anti-sense constructs, are
disclosed for use in a variety of plants. The nucleic acid encoding the cyclin-
15 dependent kinase inhibitor may be operably linked to a tissue-specific promoter.
Other provided aspects are modified transgenic plants and plant tissues. Also
provided are methods of identifying nucleic acids that encode cyclin-dependent
kinase inhibitors that are active in plants to modify the development of the plant.

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